

Recommended measures to reduce the spread of White Nose Syndrome in Virginia

September 15, 2009 (an update of the April 15, 2009 statement)

Prepared by the Virginia DCR Natural Heritage Program in consultation with members of the caving community and staff from the Virginia Department of Game and Inland Fisheries (DGIF) and supported by the Virginia Cave Board, the Virginia Speleological Survey, the Cave Conservancy of the Virginias, the Board of the Virginia Region of the National Speleological Society, and the Butler Cave Conservation Society.

This statement is a revision of the March 6, 2009 and April 15, 2009 statements from the same coalition.

WNS is now identified in every major watershed in Virginia except for the Clinch and Powell River drainages in extreme southwestern Virginia. Any caving in counties of the Clinch or Powell River watersheds should take place using equipment dedicated to those individual watersheds, and should be thoroughly decontaminated between trips to different caves. Again, please **do not use any gear in counties of the Clinch or Powell river watershed (Lee, Scott, Wise, Tazewell, Russell) that has been used in the WNS positive area.**

On March 26, 2009, the US Fish and Wildlife Service requested a voluntary moratorium on all caving activity in states known to have hibernacula affected by WNS, and all adjoining states, unless conducted as part of a Fish and Wildlife Service sanctioned research or monitoring project. The advisory is posted on the internet at <http://www.fws.gov/northeast/wnscaveadvisory.html>.

The distribution of White Nose Syndrome suggests humans may play a role in transmitting biological agent(s) responsible for WNS in bats. The strongest such evidence is that WNS is showing up first in the Virginias in recreational caves, several of which had been visited by cavers who had previously visited WNS affected caves in New York. However, at least one of the WNS affected caves in Virginia receives little recreational use. While it is unlikely that humans are the sole or even the primary vector, transmission of the disease by humans may increase both the rate of expansion and geographic extent of WNS.

Observance of the US Fish and Wildlife Service moratorium essentially eliminates the risk of WNS transmission by cavers. For those who choose not to honor the moratorium and continue to cave, the policies on the following page (**Actions to reduce the risk of transmission of WNS by cavers**), if strictly observed, should substantially reduce the risk of WNS transmission. These policies apply to both WNS-positive and WNS-free areas.

During the winter and spring of 2009, 30 Virginia caves in Bath, Bland, Craig, Giles, Highland, Lee, Page, Rockingham, Smyth, and Wise counties were surveyed for WNS. WNS has been confirmed by the National Wildlife Health Center in bat specimens exhibiting signs of WNS from five of these caves: Breathing Cave in Bath County, Clover Hollow Cave in Giles County, Endless Caverns in Rockingham County, Hancock Cave in Smyth County, and Newberry-Bane Cave system in Bland County. The initial reports of WNS signs in four of these five caves were a result of caving activity not related to official WNS monitoring efforts. As of 15 September, there are no analyses pending.

Table 1. Virginia caves surveyed for White Nose Syndrome, Jan-May, 2009 (+ indicates WNS present)

Arbegast Saltpetre (Highland)	Marshalls (Highland)
<u>+ Breathing (Bath)</u>	Maucks (Page)
Buddy Penleys (entrance area) (Bland)	Mustoe Ulcer (entrance only) (Highland)
Clarks (Bath)	New River (Giles)
<u>+ Clover Hollow (Giles)</u>	<u>+ Newberry-Bane (Bland)</u>
Coon (entrance only) (Bland)	Parsonage (Highland)
Crossroads (Bath)	Repass Saltpeter (Bland)
<u>+ Endless Caverns (Rockingham)</u>	Rocky Hollow (Wise)
Gap (Cudjo's) (Lee)	Rufe Caldwell (Craig)
Grassy Springs (Lee)	Shires (Craig)
Hamilton (Bland)	Starr Chapel (Bath)
<u>+ Hancock (Smyth)</u>	Stonley's (Tazewell)
Hupmans (entrance only) (Highland)	Tawneys (Giles)
Kelly (Wise)	Varners (Highland)
Links (Giles)	Witheros (Bath)

Biologists and karst staff within the Department of Game and Inland Fisheries and the Virginia Natural Heritage Program, using input from the caving community, are maintaining a list of significant bat caves (see below, Table 2) to be closed year-round in an effort to reduce interactions between humans and high concentrations of bats. Of the 63 caves currently on the list, twenty-one were on the VAR list of closed caves prior to the WNS crisis.

Table 2. List of caves closed in Virginia in an attempt to slow the spread of WNS

September 2, 2009

*ARBEGAST SALTPETRE (Highland)	MARTY HARPER FISSURE (Rockbridge)
ARBEGAST (Highland)	MCMULLENS (Smyth)
**BACON (Lee)	MOUNTAIN GROVE SALTPETRE (Bath)
*BANES SPRING (Bland)	MUSTOE ULCER (Highland)
<u>+ BREATHING (Bath)</u>	NEW CASTLE MURDER HOLE (Craig)
BUCHANAN SALTPETRE (Smyth)	<u>+, *NEWBERRY-BANE (Bland)</u>
*BUDDY PENLEYS (Bland)	PARSONAGE (Highland)
CABIN CAVE (Highland)	PAUL PENLEY (Bland)
*CASSELL FARM NO. 1 (Tazewell)	*PEERY SALTPETRE (Botetourt)
*CASSELL FARM NO.2 (Tazewell)	*REPASS SALTPETRE (Bland)
CATTLE (Lee)	*ROCKY HOLLOW (Wise)
CAULIFLOWER (Tazewell)	ROCKY HOLLOW PIT (Wise)
CHANCE DOVE (Rockingham)	RUFÉ CALDWELL (Craig)
CHURCH MTN. (Rockingham)	*SHIRES SALTPETRE (Craig)
CLARKS (Bath)	*SPEERS FERRY (Scott)
<u>+ CLOVER HOLLOW</u> (Giles)	*STARR CHAPEL SALTPETRE (Bath)
COON (Bland)	STONLEY (Tazewell)
EDGAR BACON (Lee)	SURGENER (Lee)
**FERRELLS (Russell)	*TILSONS SALTPETRE (Smyth)
GAP (Lee)	VARNERS (Highland)
GLENWOOD CHURCH (Tazewell)	WATER GAP (Tazewell)
**GRASSY SPRINGS (Lee)	*WARD COVE (Tazewell)
*GRIGSBY (Scott)	WARES (Bath)
HAMILTON (Bland)	*WITHEROS (Bath)
<u>+ HANCOCK (Smyth)</u>	WITTIGS (Rockingham)
HEVENER (Highland)	WOLFE (Scott)
*HIGGINBOTHAM NO.1 (Tazewell)	YOUNG-FUGATE (Lee)
*HIGGINBOTHAM NO.2 (Tazewell)	
*HUPMANS SALTPETRE (Highland)	
*KELLY (Wise)	
LITTLE GRIGSBY (Scott)	
LITTLE RIVER (Tazewell)	
LITTLE STARR CHAPEL (Bath)	
**LITTON NO.1 (Lee)	
*LOWMOOR (Allegheny)	
MARSHALLS (Highland)	

* (21) - on VAR closed cave list prior to WNS

** (4) - other caves closed prior to WNS

+ - affected by White Nose Syndrome

Note: **Endless Caverns** is a commercial cave operation, and there is no authority by which this cave can be closed. Fortunately, management is making visitors aware of the WNS presence in the cave, and most visitors of commercial caves are unlikely to visit wild caves.

Actions to reduce the risk of transmission of WNS by humans

(This applies to both WNS-positive and WNS-free areas.)

Effective September 15, 2009

1. Observation of cave closures:

- **Significant Bat Caves:** The attached list (Table 3) shows sixty-three Virginia caves that have been identified by biologists at the Virginia Department of Game and Inland Fisheries and the Virginia Natural Heritage Program for closure to help slow the spread of WNS. These caves are all significant bat caves, either in terms of numbers of bats, diversity of species, or presence of legally protected (endangered) species. These caves are included on the VAR List of Closed and Limited Access Caves. Individuals knowing of additional potentially significant bat caves should contact Rick.Reynolds@dgif.virginia.gov.
- **WNS Positive Caves:** Breathing Cave (Bath County), Clover Hollow Cave (Giles County), Endless Caverns (Rockingham County), Hancock Cave (Smyth County), Skydusky Hollow Cave System (Newberry-Bane, Buddy Penley, Paul Penley, Baner Spring, Spring Hollow, and Coon caves)

Additional WNS Positive Caves will be added to the list as identified.

- State and Federal landowners are closing caves on their lands - please check on access before entering these caves.

2. Geographic isolation of caving activity and/or gear:

Cavers are requested to limit their caving activity to one caving area as defined by a county or group of counties. The designation of caving areas appears at the end of this document, along with a map. We are asking this because sterilization procedures are not likely to be 100% effective, especially since neither the specific causal agent nor mode of transmission has yet been definitively identified. While unlikely, it is possible that the pathogen(s) could be transported not only on gear and clothing, but on or in the human body as well. Therefore we strongly recommend that cavers take the following precautions:

- If possible, please limit your caving activity to one of the caving areas listed below in Table 3.
- Cavers who choose to cave in more than one of the defined caving areas are asked to dedicate a specific set of clothing and caving gear to each respective caving area, including those not in Virginia.
- If you must go caving in multiple areas, complete disinfection of vehicles is recommended between trips to different caving areas, whether they are in or outside of Virginia.
- Special care should be taken to segregate any cave clothing and equipment dedicated for use in a given area from all other sets of clothing and equipment dedicated for use in other caving areas, whether or not these areas are in Virginia.
- Ropes should be dedicated to individual cave systems.

3. Strict adherence to decontamination procedures when moving between caves (even within the same geographically designated area and whether or not in the WNS positive area)

After exiting one cave and prior to entering another cave, even within a designated caving area, decontamination practices as outlined by the U.S. Fish and Wildlife Service must be strictly adhered to. **ALL equipment must be cleaned!** These procedures are linked to:

www.fws.gov/northeast/wnscavers.html

Please check this site frequently as updates are made as decontamination procedures are refined.

To reduce the risk of harboring or carrying the disease on their persons, cavers should thoroughly clean and scrub themselves with soap and hot water following each trip to each cave. All clothes worn while traveling to and from the caving area should be laundered as soon as possible following caving trips.

Table 3. List of Four Virginia Caving Areas

*1. Holston Area: Washington County

*2. Clinch Area: Scott, Russell, and Tazewell counties

*3. Powell Area: Lee and Wise counties

4. WNS Positive Area: Alleghany, Augusta, Bath, Bland, Botetourt, Clarke, Craig, Frederick, Giles, Highland, Montgomery, Page, Pulaski, Roanoke, Rockingham, Rockbridge, Shenandoah, **Smyth, Warren, and Wythe counties.

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- * - These areas are in the upper Tennessee River basin, and include the northeastern boundary of the range of the Gray Bat (*Myotis grisescens*). This species is not yet affected by WNS. Any gear used in caves in these areas should be used only in these areas. Gear used in WNS positive sites should not be used elsewhere. Unfortunately, WNS was verified in May in Hancock Cave (Smyth County), in the upper limits of the North Fork Holston River Watershed, 11 miles from the most northeastern Gray bat cave.
- ** - Smyth County includes the upper reaches of the North Fork Holston watershed. Since WNS is documented in Hancock Cave, Smyth County is included in the WNS Positive Area.

Map showing caving regions in Virginia

